REMARKS:

Claims 1, 7, 8, 11, 17, 18, and 51-56 are pending in this application, of which claims 1 and 11 have been amended herein.

A. The Examiner has rejected claims 1 and 11 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 5,746,844 (**Sterett et al.**) in view of U.S. Patent No. 4,656,048 (**Kudoh et al.**) and U.S. Patent No. 6,309,711 (**Tseng et al.**).

Applicants respectfully traverse this rejection, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the features set forth in the claims in issue.

Kudoh et al. measures the surface irregularities of the substrate 18 mounted on the work bench 12 (FIG. 12), which is driven by a X-axis and a Y-axis motor, with the laser beam emitting from a predetermined position (col. 3, lines 60-67) at the laser head 13. Then, the substrate 18 is moved to be positioned under the drawing head 14. The drawing head 14 is then controlled to keep the distance thereof from the substrate 18 (19) including the surface irregularities, constant (col. 4, lines 1-5) with the distance information signal.

In **Kudoh et al.**, it is apparent that the positions (coordinates of X and Y) of the surface irregularities should be the same even when the substrate 18 is moved under the drawing head 14 to draw the circuit. When the positions of the surface irregularities are changed, drawing of the circuit on the substrate cannot be successfully achieved.

In **Kudoh et al.**, the detected distances (coordinate of Z) are only transformed so that the nozzle 7 ejects the drawing paste while the slit opening 8 (the drawing head 14) is kept the distance constant from the substrate (including the irregularities). Accordingly, **Kudoh et al.** only converts the coordinate Z to, for example Z': that is, from XYZ to XYZ'.

However, the **features disclosed by the subject application convert a set of three-dimensional data (XaYaZa, FIG. 18) to a second set of three-dimensional data (XbYbZb, FIG. 3).**

Sterett et al., **Kudoh et al.**, and **Tseng et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1, as amended: "converting the data of the coordinate system having the origin located at any position of the machine to a second set of three-dimensional data associated with a reference coordinate system provided in the construction member disposed on a transfer unit and having the origin in the construction member," in combination with the other claimed features.

Sterett et al., **Kudoh et al.**, and **Tseng et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1, as amended: "intermittently jetting a molten metal against the construction member to define rows of metal grains so as to deposit the molten metal on a surface of the construction member to form the electric circuit on the construction member based on the second set of three-dimensional data," in combination with the other claimed features.

Sterett et al., **Kudoh et al.**, and **Tseng et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 11, as amended: "converting the data of the coordinate system having the origin located at any position of the machine to a second set of three-dimensional data associated with a reference coordinate system provided in the construction member or on the intermediate member disposed on a transfer unit and having the origin in the member provided," in combination with the other claimed features.

Sterett et al., **Kudoh et al.**, and **Tseng et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 11, as amended: "intermittently jetting a molten metal against the construction member to define rows of metal grains so as to deposit the molten metal on a surface of the intermediate member to form the electric circuit on the surface of the intermediate member based on the second set of three-dimensional data," in combination with the other claimed features.

Applicants submit that it would not have been obvious to combine/modify the art as suggested by the Examiner to attempt to arrive at the features set forth in **claims 1 and 11**, as amended.

The Examiner has not yet established a *prima facie* case of obviousness. But it is the burden of the Examiner to do so. The U.S. Patent and Trademark Office has the burden of proof to show that an applicant is not entitled to a patent if the claimed subject matter is anticipated by, or is obvious from, the art of record. A patent applicant is entitled to a patent "unless" the U.S. Patent and Trademark Office establishes otherwise. See, e.g., *In re Dembiczak*, 175 F.3d 994, 1001 (Fed. Cir. 1999); *In re Epstein*, 32 F.3d 1559, 1564 (Fed. Cir. 1994); *In re Rijckeart*, 9 F.3d 1551, 1552 (Fed. Cir. 1992); *In re Fine,* 837 F.2d 1071, 1074 (Fed. Cir. 1988).

In view of the foregoing amendments and remarks, it is respectfully believed that essential elements of a *prima facie* case of obviousness are missing.

Accordingly, Applicants respectfully submit that this rejection of **claims 1 and 11** should be withdrawn.

B. The Examiner has rejected claims 1 and 11 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 6,520,402 (**Orme-Marmerilis et al.**) or Japanese Patent No. 10-266803 (**Yamaguchi**) in view of U.S. Patent No. 4,656,048 (**Kudoh et al.**) and U.S. Patent No. 6,309,711 (**Tseng et al.**).

Applicants respectfully traverse this rejection, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the features set forth in the claims in issue.

Orme-Marmerilis et al., **Yamaguchi, Kudoh et al.**, and **Tseng et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1, as amended: "converting the data of the coordinate system having the origin located at any position of the machine to a second set of three-dimensional data associated with a reference coordinate system provided in the construction member disposed on a transfer unit and having the origin in the construction member," in combination with the other claimed features.

Orme-Marmerilis et al., **Yamaguchi, Kudoh et al.**, and **Tseng et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1, as amended: "intermittently jetting a molten metal against the construction member to define rows of

metal grains so as to deposit the molten metal on a surface of the construction member to form the electric circuit on the construction member based on the second set of three-dimensional data," in combination with the other claimed features.

Orme-Marmerilis et al., **Yamaguchi, Kudoh et al.**, and **Tseng et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 11, as amended: "converting the data of the coordinate system having the origin located at any position of the machine to a second set of three-dimensional data associated with a reference coordinate system provided in the construction member or on the intermediate member disposed on a transfer unit and having the origin in the member provided," in combination with the other claimed features.

Orme-Marmerilis et al., **Yamaguchi, Kudoh et al.**, and **Tseng et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 11, as amended: "intermittently jetting a molten metal against the construction member to define rows of metal grains so as to deposit the molten metal on a surface of the intermediate member to form the electric circuit on the surface of the intermediate member based on the second set of three-dimensional data," in combination with the other claimed features.

Applicants submit that it would not have been obvious to combine/modify the art as

suggested by the Examiner to attempt to arrive at the features set forth in **claims 1 and 11**, as amended. Essential elements of a *prima facie* case of obviousness are missing.

Accordingly, in view of the above, Applicants respectfully submit that this rejection of **claims 1 and 11** should be withdrawn.

C. The Examiner has rejected claims 7, 8, 17, and 18 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 6,520,402 (**Orme-Marmerilis et al.**), U.S. Patent No. 5,746,844 (**Sterett et al.**), or Japanese Patent No. 10-266803 (**Yamaguchi**) in view of U.S. Patent No. 4,656,048 (**Kudoh et al.**), U.S. Patent No. 6,309,711 (**Tseng et al.**), and U.S Patent No. 6,501,663 (**Pan**).

Applicants respectfully traverse this rejection, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the features set forth in the claims in issue.

Orme-Marmerilis et al., **Sterett et al.**, **Yamaguchi**, **Kudoh et al.**, **Tseng et al.**, and **Pan**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim

1, as amended: "converting the data of the coordinate system having the origin located at any position of the machine to a second set of three-dimensional data associated with a reference coordinate system provided in the construction member disposed on a transfer unit and having the origin in the construction member," in combination with the other claimed features.

Orme-Marmerilis et al., **Sterett et al.**, **Yamaguchi**, **Kudoh et al.**, **Tseng et al.**, and **Pan**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1, as amended: "intermittently jetting a molten metal against the construction member to define rows of metal grains so as to deposit the molten metal on a surface of the construction member to form the electric circuit on the construction member based on the second set of three-dimensional data," in combination with the other claimed features.

Orme-Marmerilis et al., **Sterett et al.**, **Yamaguchi**, **Kudoh et al.**, **Tseng et al.**, and **Pan**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 11, as amended: "converting the data of the coordinate system having the origin located at any position of the machine to a second set of three-dimensional data associated with a reference coordinate system provided in the construction member or on the intermediate member disposed on a transfer unit and having the origin in the member provided," in combination with the other claimed features.

Orme-Marmerilis et al., **Sterett et al.**, **Yamaguchi**, **Kudoh et al.**, **Tseng et al.**, and **Pan**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 11, as amended: "intermittently jetting a molten metal against the construction member to define rows of metal grains so as to deposit the molten metal on a surface of the intermediate member to form the electric circuit on the surface of the intermediate member based on the second set of three-dimensional data," in combination with the other claimed features.

Applicants submit that it would not have been obvious to combine/modify the art as suggested by the Examiner to attempt to arrive at the features set forth in **claims 1** and **11**, as amended. Essential elements of a *prima facie* case of obviousness are missing.

Accordingly, in view of the above, Applicants respectfully submit that this rejection of claims 7, 8, 17, and 18 should be withdrawn by virtue of their dependency.

D. The Examiner has rejected claims 51-56 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 6,520,402 (**Orme-Marmerilis et al.**), U.S. Patent No. 5,746,844 (**Sterett et al.**) or Japanese Patent No. 10-266803 (**Yamaguchi**) in view of U.S. Patent No. 4,656,048 (**Kudoh et al.**), U.S. Patent No. 6,309,711 (**Tseng et al.**), and Japanese Patent No. 11-40937 (**Kuwahara et al.**).

Applicants respectfully traverse this rejection, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the features set forth in the claims in issue.

Orme-Marmerilis et al., **Sterett et al.**, **Yamaguchi**, **Kudoh et al.**, **Tseng et al.**, and **Kuwahara et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1, as amended: "converting the data of the coordinate system having the origin located at any position of the machine to a second set of three-dimensional data associated with a reference coordinate system provided in the construction member disposed on a transfer unit and having the origin in the construction member," in combination with the other claimed features.

Orme-Marmerilis et al., **Sterett et al.**, **Yamaguchi**, **Kudoh et al.**, **Tseng et al.**, and

Kuwahara et al., alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1, as amended: "intermittently jetting a molten metal against the construction member to define rows of metal grains so as to deposit the molten metal on a surface of the construction member to form the electric circuit on the construction member based on the second set of three-dimensional data," in combination with the other claimed features.

Orme-Marmerilis et al., **Sterett et al.**, **Yamaguchi**, **Kudoh et al.**, **Tseng et al.**, and **Kuwahara et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 11, as amended: "converting the data of the coordinate system having the origin located at any position of the machine to a second set of three-dimensional data associated with a reference coordinate system provided in the construction member or on the intermediate member disposed on a transfer unit and having the origin in the member provided," in combination with the other claimed features.

Orme-Marmerilis et al., **Sterett et al.**, **Yamaguchi**, **Kudoh et al.**, **Tseng et al.**, and **Kuwahara et al.**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 11, as amended: "intermittently jetting a molten metal against the construction member to define rows of metal grains so as to deposit the molten metal on a surface of the intermediate member to form the electric circuit on the surface of the intermediate member based on the second set of three-dimensional data," in combination with the other claimed features.

Applicants submit that it would not have been obvious to combine/modify the art as suggested by the Examiner to attempt to arrive at the features set forth in **claims 1** and **11**, as amended. Essential elements of a *prima facie* case of obviousness are missing.

Accordingly, in view of the above, Applicants respectfully submit that this rejection of claims 51-56 should be withdrawn by virtue of their dependency.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,
KRATZ, QUINTOS & HANSON, LLP

Darren Crew
Attorney for Applicants
Reg. No. 37,806

DC/llf

Atty. Docket No. **020052**
Suite 400
1420 K Street, N.W.
Washington, D.C. 20005
(202) 659-2930

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